

***Ankrd12* Cas9-KO Strategy**

Designer: Xueting Zhang

Reviewer: Daohua Xu

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Project Overview

Project Name

Ankrd12

Project type

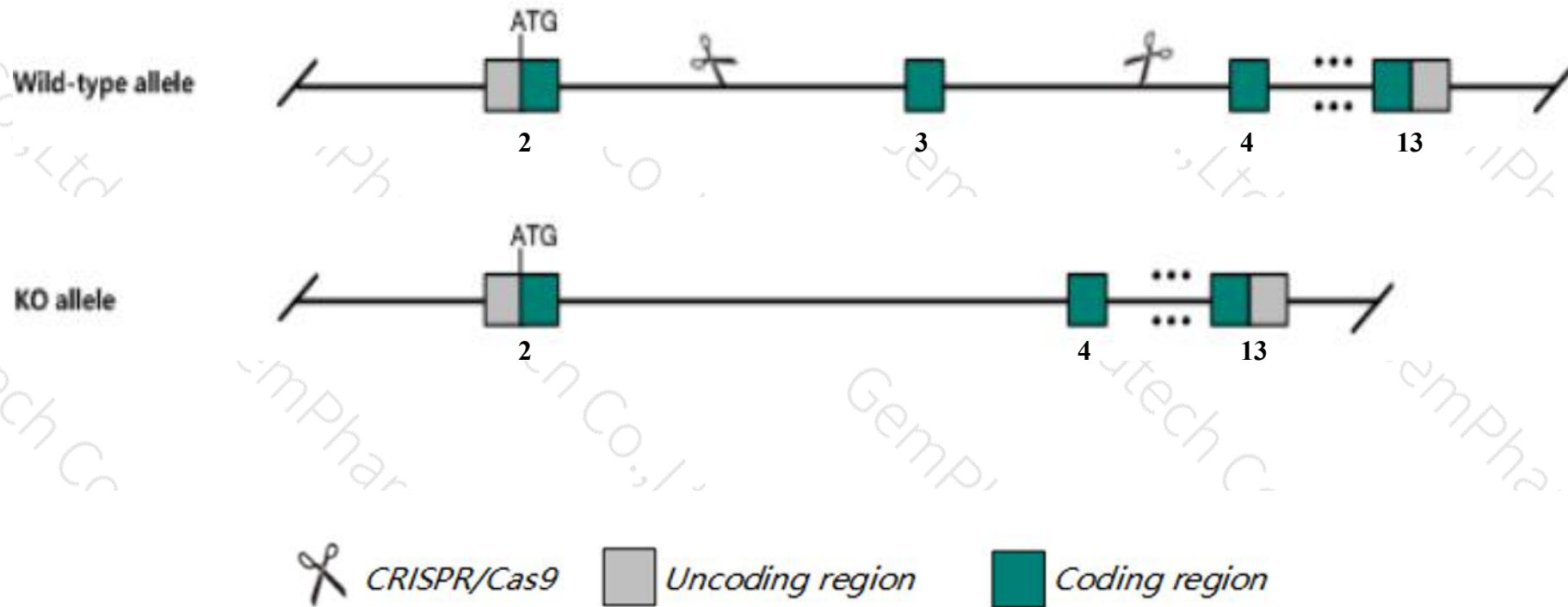
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ankrd12* gene. The schematic diagram is as follows:



- The *Ankrd12* gene has 11 transcripts. According to the structure of *Ankrd12* gene, exon3 of *Ankrd12*-201(ENSMUST00000038116.12) transcript is recommended as the knockout region. The region contains 148bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ankrd12* gene. The brief process is as follows: CRISPR/Cas9 system were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

- The *Ankrd12* gene is located on the Chr17. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- Transcript *Ankrd12*-205&207 may not be affected.
- The effect on transcript *Ankrd12*-211 is unknown.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Ankrd12 ankyrin repeat domain 12 [Mus musculus (house mouse)]

Gene ID: 106585, updated on 13-Mar-2020

Summary



Official Symbol	Ankrd12 provided by MGI
Official Full Name	ankyrin repeat domain 12 provided by MGI
Primary source	MGI:MGI:1914357
See related	Ensembl:ENSMUSG00000034647
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2900001A12Rik, AI447928, ANCO-2, AV347965, GAC-1, mKIAA0874
Expression	Broad expression in CNS E18 (RPKM 6.8), whole brain E14.5 (RPKM 5.1) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

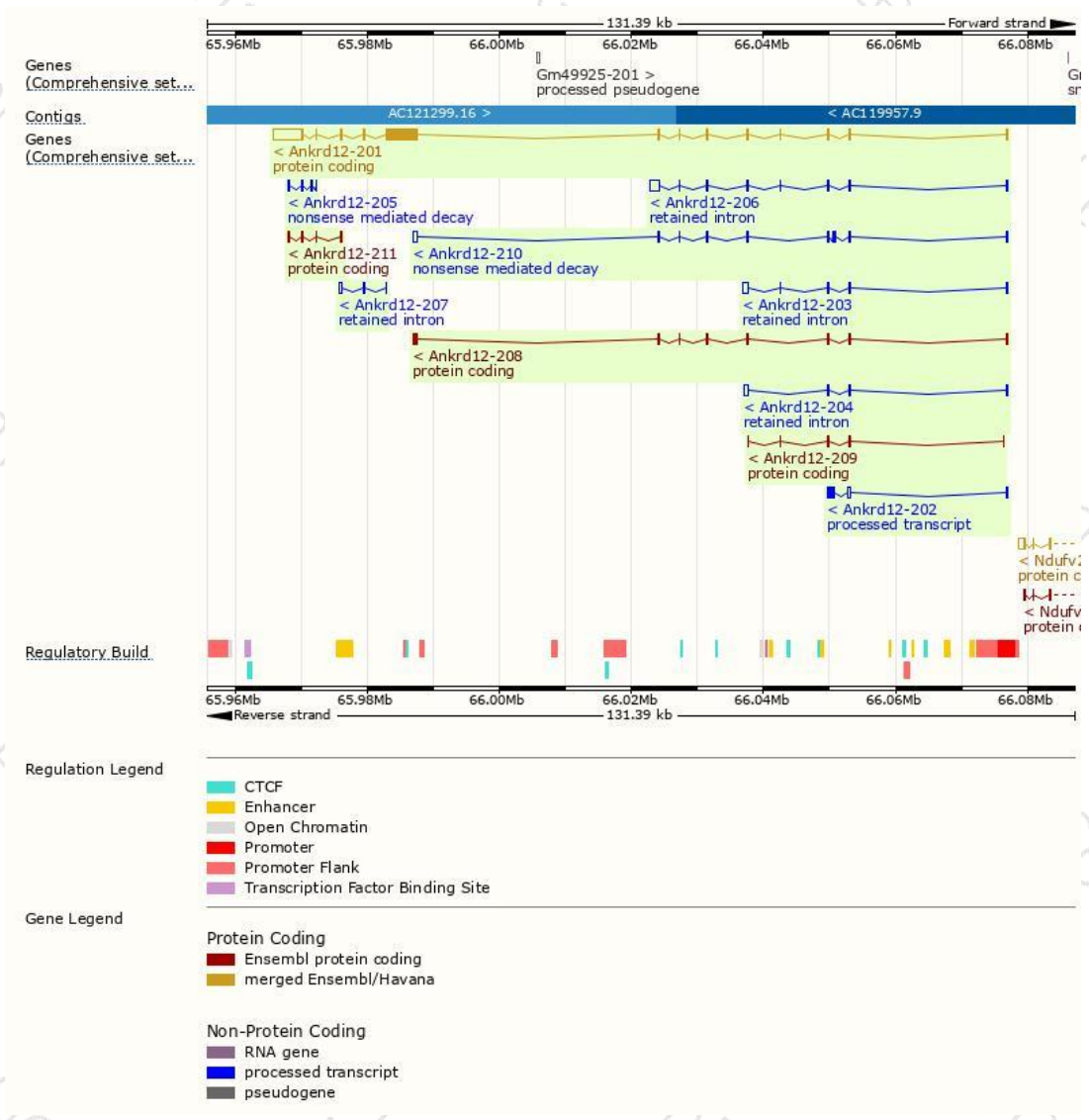
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ankrd12-201	ENSMUST00000038116.12	10821	2041aa	Protein coding	CCDS28943	G5E893	TSL:5 GENCODE basic APPRIS P1
Ankrd12-208	ENSMUST00000150766.1	1513	441aa	Protein coding	-	Q3U569	CDS 3' incomplete TSL:1
Ankrd12-211	ENSMUST00000233978.1	474	125aa	Protein coding	-	A0A3B2WAN9	CDS 5' incomplete
Ankrd12-209	ENSMUST00000233045.1	455	110aa	Protein coding	-	A0A3B2W3X3	CDS 3' incomplete
Ankrd12-210	ENSMUST00000233407.1	1794	76aa	Nonsense mediated decay	-	A0A3B2W7I2	
Ankrd12-205	ENSMUST00000139901.2	623	52aa	Nonsense mediated decay	-	A0A3B2W470	CDS 5' incomplete TSL:5
Ankrd12-202	ENSMUST00000124297.2	878	No protein	Processed transcript	-	-	TSL:2
Ankrd12-206	ENSMUST00000143516.7	2342	No protein	Retained intron	-	-	TSL:1
Ankrd12-203	ENSMUST00000129756.7	1403	No protein	Retained intron	-	-	TSL:2
Ankrd12-204	ENSMUST00000135136.7	943	No protein	Retained intron	-	-	TSL:1
Ankrd12-207	ENSMUST00000146090.1	535	No protein	Retained intron	-	-	TSL:3

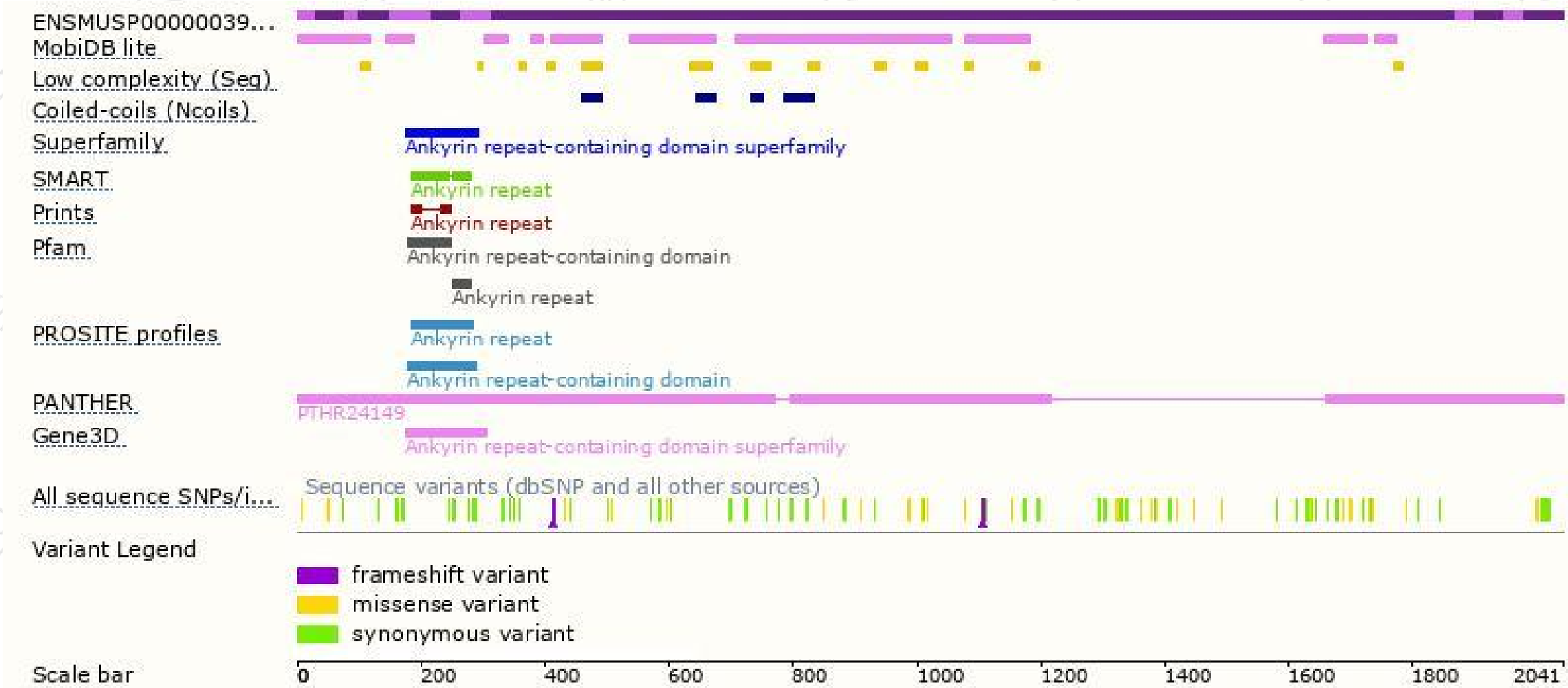
The strategy is based on the design of *Ankrd12-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.

Tel: 400-9660890

